

## Molarity Practice

**Objective:** The purpose of this lab is to use skills learned in class to physically produce % (mass/vol.) solutions as well as Molarity (mol/L) solutions.

**Materials:** Distilled water, 100ml volumetric flask, scales, Sodium Bicarbonate, Ammonium nitrate, Cupric (II) Sulfate, Potassium Chloride

Procedure: You will be given 1 of 2 groups of solutions that you have to make. You **must perform all calculations first** and show them in your pre lab work.

1. Measure the amount of solid to add to the volumetric flask.
2. Fill volumetric flask with appropriate amount of distilled water, cap and mix. You must put this information in the data table you make on a separate piece of paper.
3. When finished solutions can go down sink.

Desired Solutions:		Chemical Formula:
A <sub>1</sub>	1.5 % (m/v) Sodium Bicarbonate (100ml)	?
A <sub>2</sub>	100 ml of 0.081 M Copper (II) Sulfate	?
B <sub>1</sub>	0.25% (m/v) Ammonium Nitrate (100ml)	?
B <sub>2</sub>	100 ml of 0.3 M Potassium Chloride	?

**Data Table:**

Compound	Mass of Solute	Volume of Solution (ml)	Volume of Solution (L)
Sodium Bicarbonate			
Copper II Sulfate			
Ammonium Nitrate			
Potassium Chloride			

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Post Lab Questions:

1. What would be the molarity of a 50ml solution containing 0.4 grams of Sodium Hydroxide?
2. What would be the molarity of a 150ml solution containing 13 grams of Calcium Phosphate?
3. How many grams of HCl are in a 6M HCl solution with a volume of 500ml ?
4. What is the molarity of solution #1? Solution number #2?
5. What are some possible sources of error in making solutions? Give at least five (5) and state how to avoid them.
6. Write out the steps for preparing a 200ml, 1.5M solution of Sodium Chloride. Assume you only have the materials available in this lab (100ml volumetric flask, digital balance, and distilled water) SHOW ALL CALCULATIONS.
7. Write out the steps for preparing a 1.5L, 6M solution of Sodium Hydroxide. Assume you only have the materials available in this lab (1000ml volumetric flask, digital balance, and distilled water) SHOW ALL CALCULATIONS.

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